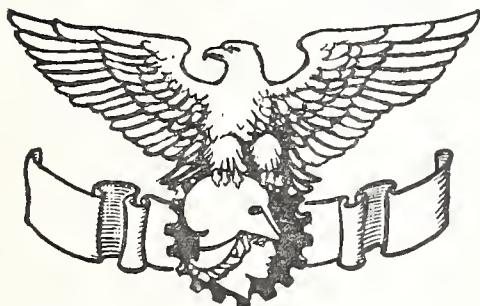


# INDUSTRIAL ART

## A NATIONAL ASSET

### *A SERIES OF GRAPHIC CHARTS*

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DEPARTMENT OF THE INTERIOR  
BUREAU OF EDUCATION  
Washington, D.C.



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## PREFACE.

The value of art in industry is graphically demonstrated by the following 10 charts. These charts were adapted by Mr. H. M. Kurtzworth from a similar series that he had prepared, using the city of Grand Rapids as the central point of interest.

The Grand Rapids charts showed the industrial position of that city and the commercial advantages to be gained through a knowledge of the principles of art; they aided greatly in securing for Grand Rapids an annual appropriation of about \$5,000 for the maintenance of a school of art and industry. This school, of which Jesse B. Davis is principal, is part of the city's public school system. Similar schools of design might, with advantage, be established in every city having 50,000 or more inhabitants.

Mr. Kurtzworth, now director of the Grand Rapids School of Art and Industry, describes its purpose as follows:

This school is maintained by the people of a city who realize that incompetency is criminal and that America's progress will be in direct proportion to the individual preparedness of its citizens. No expenditure of time or money pays larger dividends of the goods of life than the funds invested for special training in the practical arts and industries.

Good draftsmanship, as the basis of all graphic and constructive arts, not only is a means of making a living but is one of the best ways of learning to see, think about, reproduce, and recreate the things that make life enjoyable and efficient.

The original Grand Rapids charts seemed so valuable that they were shown at the convention of The American Federation of Arts held at Detroit in May, 1918. At that convention the federation passed a resolution urging the Bureau of Education to issue more publications on industrial art topics. This pamphlet is the first result of that resolution.

FLORENCE N. LEVY,  
*General Manager, Art Alliance of America.*

## PROMOTION OF INDUSTRIAL ART URGED.

(Resolutions adopted by The American Federation of Arts, Detroit, Mich., May 24, 1918.)

Whereas good design and the highest type of workmanship in American manufactures are absolutely necessary to enable the United States to hold a foremost place in the world's commerce; be it therefore—

*Resolved*, That the Federal Board for Vocational Education, which controls the funds appropriated through the Smith-Hughes law, be urged to adopt the principle that industrial art should be given a prominent place in all vocational education supported by this law.

Whereas the United States Government issues pamphlets and bulletins on nearly all subjects relating to education, but provides very little literature on the subject of art education; therefore be it—

*Resolved*, That the Bureau of Education be requested to include publications on art education among the subjects on which it provides literature for the public.

## INDUSTRIAL ART A NATIONAL ASSET.

By H. M. KURTZWORTH,

*Director, Grand Rapids School of Art and Industry, Grand Rapids, Mich.*

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### DESIGN IN THE EVOLUTION OF IDEAS.

(See Chart 1.)

Symbolizing the stages through which an idea would pass in becoming an article of use, the "Constructive process" may be roughly divided into eight steps. Steps One to Six, we find, are concerned with the producing part of the population, ordinarily occupied in factories or on farms, etc. Step Seven concerns the distributing part of the population occupied in stores, while Step Eight involves the entire population as consumers of the goods of life, chiefly in the home.

Step One is based upon that characteristic of mankind to hope for better things, to feel the necessity of improvement and through the aid of the prophet, the philosopher, the artist, the inventor, the designer, and the manufacturer, as the case may be, to bring about new things and better conditions. Those who bring the future into the present must possess a large fund of imagination readily adapted to understanding the cravings of the race.

Step Two finds the average person, recognizing in the product of some others' hands, the product forecast by his own wants. This he studies and unwittingly adapts or improves as becomes his understanding, needs, and skill. Our museums and libraries are the outgrowth of this instinct of comparison—monuments of man's ability to use the work of his forefathers as stepping-stones of advancement.

Step Three is the result of the egoistic instinct that urges us to desire the best—to assert individuality. Whether this is done graphically or by making and discarding numerous other experiments until a satisfying result is obtained matters little; the result is more often based on an understanding of drawing and design.

Step Four consists of choosing from among these rough drafts, notes, or sketches the suggestions which best fit the requirements at hand and of assembling these ideas into tangible shape as in a drawing, an architectural rendering, a model or "copy" for a book. Here the workman needs a thorough understanding of the technique of the materials of his craft.

Step Five in most kinds of work is the connecting link between the designer's idea of what an object should be and how it should be made. Such drawings depend upon the principles of orthographics and mathematical accuracy necessary to give the workman definite directions.

Step Six consists of carrying out the ideas of the previous steps to produce a suit of clothes, a book, a skyscraper, or any other product of the trades, arts, or industries which depend upon an understanding of the numerous processes involving skill and efficiency on the part of the artisans, workmen, and laborers of our industries.

Step Seven is concerned with disposing of the objects profitably by creating a demand for the things we have made as producers, and, as consumers, of demanding the materials for which we have need. This step, being dominated by merchants and salespeople, involves an understanding of psychology in addition to the manifold operations of business, banking, economics, as well as the foregoing steps.

Step Eight brings to us, as we see them in every day use, the objects which in Step One were but hazy ideas and finds us unwittingly using them as means of building character. In direct proportion with our ability of choosing, through an understanding based upon the preceding steps, we may measure our enjoyment of life to the limit of the economic means and mental resources at our disposal.

An understanding of the proper production, distribution, and use of any article is dependent upon a mental grasp of the ideas which went into its construction. Analytical thought is best aided in becoming the synthetic activity of the producer by taking graphic form through skill in drawing. While drawing is directly connected with the first five steps the workmen who make a product, the salespeople who sell it, and the entire public who consume it need very definite training in seeing the relationship between design and their own activities.

It is the function of industrial art education to show that design in the broad sense is a dynamic factor in progressive civilization, helping each individual realize that his own character and the progress of civilization is the result of the training in these very fundamentals which give master workmen their inspiring power for good.

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## EDUCATION IS AN INVESTMENT.

(See Chart 2.)

While the activities of a nation depend upon its average ability it is only through training of the individual that the average can be changed.

The comparison between the length of time the average hundred boys and girls remain in school and the incomes of the average American wage earners offers valuable suggestions.

Sixty-seven per cent leave school before completing the eighth grade.



Sixty-eight per cent of our citizens earn less than \$15 a week.

The main voluntary reason why 67 per cent of the grade school students leave school at such a vital time is because they are not interested in the work the ordinary school offers. Their thoughts are the same as the thoughts of their forefathers at the same age when under the apprentice system they were first given concrete work to do and after being shown how to do it were told the theory of it as they progressed.

Under modern conditions the predomination of unrelated abstract studies has made the students restless and eager to do something which, to their mind at least, seems to employ all their activities.

These are the boys and girls upon whom the Nation depends for its skilled workmen. Their wages have been low because means were not at hand to turn their talents to higher account. They have been allowed to drift. Even manual-training courses which have not always shown their relation to real life, as through the constructive process, have not served as a great incentive to remaining in school.

Thirty-three per cent of the students entering school complete the eighth grade.

Thirty-two per cent of the workers of the Nation earn over \$15 per week.

From those thus remaining in school are recruited the more highly skilled workmen and practically the entire body of the professions, including the designers, upon whom the entire fabric of American manufactures depends. Higher standards of workmanship and higher wages depend upon the training given in the industrial arts to those who form the mass of workmen and upon whose skill depends the carrying out of the designer's ideas. In England, as well as America, 90 per cent of the people gain no technical education higher than the eighth grade. This means that 90 per cent of the workers between the ages of 16 and 23 have no technical training except that which they have "picked up" themselves. This means that the Nation's industries are run in a "hit or miss" fashion without regard for national welfare. This means that steps must be taken to inspire workers to desire training and employers to expect and pay for it. From among the sons of workmen will come the future generation of designers. The Nation has provided facilities for training workers in their trades through the Smith-Hughes act. Means must also be provided through special training in the industrial arts to help those with especial skill to become leaders in their crafts.

The riches of the Nation and the individual can only increase through an extension of the length and an increase in the quality of the education of its youth.

There is a direct and proportional relationship between the education in the industrial arts which a city provides, the value of its product and the incomes of the workers thus trained.

**DESIGN EFFECTIVELY APPLIES NATIONAL ENERGY.**

(See Chart 3.)

The way in which the talents of a nation are trained for use determines that nation's line and extent of progress.

The value of design as a means of efficiently distributing energy according to time or occupation is a fact implied in the Smith-Hughes bill if not directly provided for.

According to time, the energy of the ideal day is divided into eight hours work, eight hours recreation, and eight hours sleep. Only one-third of this time is possibly employed in productive work in shop, store, or office; the other two-thirds being occupied at home or in the connected institutions. Training in the industrial arts can add to the efficiency and the enjoyment of all the hours of the day.

According to occupation the need for an understanding of the value of the industrial arts is an integral part of the six main occupational divisions of the population. The producing portion of the population encompasses Classes II, III, and VI, a total of 35 per cent, including 18 per cent devoted to agriculture and mining, 15 per cent devoted to manufacturing, and 2 per cent pursuing the professions. As distributors, 18 per cent of the people are occupied in commerce and 5 per cent in domestic service. The chief function of the average householder under modern conditions is that of a consumer, 47 per cent of the entire population being thus occupied at home. The entire population, however, while being occupied as 35 per cent producers 33 per cent of the time, is nevertheless 100 per cent consumer of many commodities 100 per cent of the time.

In order that the Nation may prepare its citizens for these tasks, training is needed as follows:

A. To enable them to earn a living to the best of their ability. In most skilled industries drawing and design are essential.

B. To preserve their health. If environment and health are related then industrial art and hygiene are related, for they are the basis of good environment.

C. To perform the functions of good citizenship. If good citizenship is dependent upon good householders, then the industrial arts are adjuncts to civic progress.

D. To profitably enjoy their leisure. In many avocations the basis of enjoyment is training in the arts.

The nature of courses preparing for occupations as consumers, producers, and distributors, under the best conditions, involves a thorough grasp of the constructive process as applied to the different courses in: (1) Household arts; (2) agriculture and gardening; (3) trades and industries; (4) commerce, salesmanship, etc.; (5) the domestic occupations; and (6) the professions.



There are not three standards of good taste, one for the producer, one for the storekeeper, and a third for the person who buys the goods, yet these three groups have in modern times each misjudged the others because education has yet to standardize and inter-relate their interests and tastes.

It is the work of the industrial-art schools to lead the way in bringing these groups together and in giving them a common aim based upon the future welfare of the citizens. Upon such unified conceptions of the value of the highly trained talents of her citizens the industrial, commercial, personal, civic, and national welfare of the United States depends.

The Smith-Hughes bill was designed to increase the skill of workers through technical training. The training of the designers whose work will be carried out by these workmen is left to special schools of industrial art. Reproductive talent is a vital necessity to American industries, but their competitive success depends upon the special training of the creative talent of the designer. However the training of workmen in the industries which involve design must not be neglected, for upon their understanding of the designer's objectives the success of whole industries often depends.

Every workman should be something of a designer; every designer something of a workman. The success of both depends upon the intelligent consumer who understands the essentials of good workmanship and fine design.

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## THE INDUSTRIAL ARTS AND NATIONAL CHARACTER.

(See Chart 4.)

Character is the alpha and omega of the arts and the industries. The way a man lives and the way he works are evident in his products. In time his work influences others as elements of their environments. The effect of environment upon character and the industrial arts upon environment indicates definitely now, as it has in previous chapters of the history of the race, that the fate of the Nation lies in the hands of the workmen and designers even more than warriors or statesmen.

In the choice of the furnishings of American homes two-thirds of which, by the way, must be chosen according to the dictates of incomes of less than \$15 per week, the average citizen finds his chief opportunity to express his instinct for the beautiful. (See Chart 2.)

Imagine the effect for good or evil of over one hundred and two million "artists" thus creating an environment in over eighteen million dwellings for the increasing 22,000,000 families.

If, as in the case of clothing and food, the fallacious ideas of one generation passed with it, the curse of ignorance might gradually

die of its own accord, but the industrial arts of a generation often outlive the race. Being more enduring and less able to be hidden or lost the chief industrial arts of architecture, furnishings, tools, and utensils of each succeeding family remain to curse or inspire those following.

In previous ages standards were established by religious or state organizations for maintaining high types of design. In our own time the whole problem is in the hands of the people who, through the appointment of art commissions and the establishment of building codes, seek to overcome the crime-breeding influence of slums and the narrowness of city life due to lack of parks and so on. They should go farther by taking definite and active means of creating higher standards of taste through inspirational exhibitions and illustrated lectures.

These good tendencies, however, can only succeed when the whole people have been brought to appreciate such work and actively to aid it through an education in the industrial arts that will enable them to realize the importance of rearing their children in a proper environment which, as purchasers, they too often overlook. When those who sell as well as those who make the details of our man-made surroundings realize the far-reaching effect of their work, their salesmanship and their choice will tend to improve if the facilities are provided.

Compared with the development of any European nation we, in this day, rank with the builders of the pyramids, the architects of the Athenian Acropolis or the Roman Forum. We are the cathedral builders of our Nation. We live in the "golden age" which, when through the mist of a century or two, future generations may look back toward our time as we look backward to A. D. 1500 and say: "Those were days of opportunity. Those were days when men had high ideals and dared to build toward them, when men loved their work and knew how to enjoy life. Then the workman and the artist worked together and the people were happier for it. The people inspired the designers by having a taste that required good workmanship and in turn the designers, artists, and workmen inspired the public to still higher desires."

According to our ideals we are shaping the environment and therefore the character of the race, for all time, through our industrial arts.

It is the high privilege of the present generation to take the necessary steps that will serve as the basis for the future development of the true democratic American characteristics through education in the industrial arts.

## EFFICIENT ART COURSES IN GRADE AND HIGH SCHOOLS ARE NECESSARY.

(See Chart 5.)

As pointed out in the previous chart, the character of the Nation is dependent upon the esthetic education of the whole population. More than 90 per cent of our citizens are entirely dependent upon the art education they have received before leaving the eighth grade (see Chart 2), and 7 per cent are likewise dependent upon the taste they have acquired as far as high school (the other 3 per cent possibly continuing the study). It is evident, therefore, that both grade and high school courses in drawing, manual training, or any form of the industrial arts should deal with the appreciation and understanding of the vital things of actual life, as a means of—

First, enabling students to see more accurately, since the bulk of our knowledge, a great deal of our work, and much of our enjoyment of life depend upon the proper exercise of the analytical eye.

Second, through the exercise of this valuable function, to apprehend the wonders of the natural world and their relation to the knowledge, sciences, and works of man.

Third, being able to express such ideas adequately, accurately, and with some beauty, in order that they may fully explain ideas where words fail or where construction necessitates definite mechanical accuracy with the chief object of understanding the value of beauty and the need of design as elements of their work as intelligent consuming householders or as expert workmen.

Fourth, to encourage pupils to continue through the technical schools of art and industry, and to prepare themselves to become salesmen or makers of the useful and beautiful things which enhance the full realization of life's possibilities and true enjoyment thereof.

The importance and effect of each drawing lesson increase when we realize that the taste of the American people depends upon them. The most important part of any lesson in drawing or design in any school is the acquirement of standards of taste derived from the study and drawing of the best examples of the everyday arts and crafts. As far as possible, studies in design should be based upon the objects, thus drawn, as indicated in the "Constructive process." Under proper conditions all the steps could be completed.

In order to aid in thus forming standards of judgment, appreciation, and principles of good taste, collections of articles are needed which set high standards. In other words, schools need collections of fine objects for study, just as they now have collections of books. Yet, with the exception of a few professional art schools and the fact that museums are sometimes ready to lend materials to them,



most of our schools of all kinds lack this most important facility for objective enlightenment.

The improved arrangement of exhibits in museums and art galleries and the fact that lecturers on the industrial arts are coming more and more to illustrate their discourses with the actual materials are steps in the development of appreciation. Upon such work the further development of the Nation's industrial arts can safely be based.

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## TRAINING INCREASES QUALITY AND QUANTITY OF A NATION'S PRODUCTS.

(See Chart 6.)

"It is evident to every thinking man that our industries on the farms, in the shop yards, in the mines, and in the factories must be more prolific and more efficient than ever."—WOODROW WILSON.

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America must make the most of all her resources not only as an immediate reconstruction measure but also as a means of continuing her commercial supremacy.

The commercial supremacy the United States has built was largely reared upon the bulk disposal of raw or semifinished materials.

American natural resources, while vast, are not unlimited. In fact, according to the National Conservation Commission, "the known supply of high-grade iron ore in the United States approximates 4,788,000,000 tons, which, at the present increasing rate of consumption, can not be expected to last beyond the middle of the present century."

This is an example of similar situations regarding other raw materials, particularly minerals.

We have been selling our resources on the bulk basis. It is said the United States sells 2,000 pounds of goods per \$100, England sells 1,000 pounds of goods per \$100, France sells 400 pounds per \$100, and Germany sold 30 pounds per \$100.

Either we must turn from our quantity methods and, through industrial art training, put the Nation's commerce on a quality basis or we shall lose the opportunities and advantages which our fast diminishing resources of raw materials offer.

On the chart the commodities are arranged within the groups according to the degree of skill and workmanship required. The value of a finished product is represented by adding the value of the raw material to the value added through skill. The column for the per cent skill added to the value of raw material shows that where the skill is greater the value increases proportionately.

While workmen make pig iron 21 per cent more valuable than the raw iron ore and greater skill adds 500 per cent when it is made into

cash registers or adding machines, higher kinds of hand workmanship command even higher additions, as in the case of wrought iron, watch springs, automobiles, etc. The same idea carries through the succeeding list of wood, leather, cotton, wool, clay, and printing materials. The most skilled designer may take a few dollars' worth of material and through his skill create objects worth one hundred times the value of the raw material, an increase of 10,000 per cent.

There is no limit to the value that design and workmanship can add to the raw materials of the Nation, except that which is imposed by a lack of facilities for training the designers, workmen, salespeople, and consumers. The United States will not be able to increase the worth of its products toward the highest market values until it has more schools to train its people in the refinements of design and workmanship.

Industrial art schools will train the natural aptitude for skill of our people into using the Nation's raw materials more efficiently and by inaugurating, through research, a more thorough use of by-products in order that we may be less dependent in the future upon foreign countries for the finest goods we use.

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## TRAINING INCREASES NATURAL ADVANTAGES.

(See Chart 7.)

The resources of the geographical environment not only determine the nature of a State's industries but also provide, in almost every case, the basis for further development through industrial education.

It has been the unfortunate custom of American pioneers to build up fortunes by squandering the rich natural resources of the soil, overlooking the fact that all resources are limited and that the greatest profits are not gained through the crude labor which sells its output by the ton.

Michigan, as a State which ranks third in mineral resources and seventh in manufacturing, is an example of the opportunities that education in the industrial arts has for developing the Nation.

If a State gains a certain rank in the production of raw material, such as lumber, and through the initiative of its citizens has attained the same rank in the manufacturing of furniture, that State might be said to be living up to its possibilities. On the other hand, if the manufactures of a vicinity are not equal in value to the raw materials of the same kind it is apparent that some means should be taken to make better use of the opportunities implied.

The efforts of organizations for civic development can only be effective when reinforced by public institutions which will train the workmen and others necessary for the maintenance of industries established to use natural resources efficiently.



The Michigan furniture industry was founded through the fact that the raw product was plentiful and skilled workmen, who had been trained abroad, were at hand to convert it into finished articles. The paper industry was based upon the same natural advantage.

In each of the six sets of commodities mentioned it is found that while the raw-product rank of the State is directly due to some natural advantage, the rank held as producer of the finished product is due to skill. This depends upon the facilities a given State has for training its designers and workmen.

A State rich in schools for training its workmen even though poor in natural resources has a greater advantage than a community which is rich in raw materials but lacks facilities for converting them into marketable goods of the better type.

The average extra dividend which skilled workmanship declares to a community is 59 per cent of the value of the finished product, the raw material being on an average worth 41 per cent of the selling price. Skill therefore adds to the wealth of a State on an average 144 per cent through a more efficient use of its raw materials.

While these facts now show the eventual value of industrially training the whole citizenship, their immediate appeal is to the 7,000,000 workmen employed in the 275,000 manufacturing plants of the nation.

Workmen desire to increase their wages.

Manufacturers desire to increase their revenue.

The State must continue to progress.

The cooperation of the State, the manufacturers, and organized workmen will make it possible to establish and maintain the sort of industrial art schools which will enable the United States to have the world for its market and increasing prosperity as its reward.

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## THE VALUE OF INDUSTRIAL ART SCHOOLS.

(See Chart 8.)

We have been dependent upon foreign countries for manufacturing many of our raw materials (to be reshipped to us for use in this country). Whatever evidences of skill in design and workmanship there have been in our own manufactures are the result either of foreign designers or of Americans trained abroad.

We are now on our own resources.

Our future as an industrial nation depends upon the plans we make to-day.

We have heretofore looked upon education as a luxury. We must now see education in industrial arts as a necessity. While our industries have made art schools possible in the past and the industries have benefited indirectly, the industrial art schools of the future

will directly aid established industries and help create new ones through their vital directed efforts.

There is an interesting relationship between the rank of States in the value added to products through manufacturing and in their rank according to the number of art schools, though the lack of industrial art schools is astounding. Whatever training the bulk of American workmen and designers have gained for the industries has been the result of the work of the existing art schools, however inefficient they may have been.

On the average the States ranking highest in the amount of money which skill has added to the value of their manufacturing are also found to have the highest number of art schools. In the future it may be predicted that a change brought about within a State through the establishment of more industrial art schools will tend to vary that State's rank, in value of products, toward the higher places on the list. Successful competition is becoming more a matter of intensive school training than a dependence upon the haphazard methods of yesterday. It is becoming more a matter of good designs and the efficient offices of the trained storekeeper than the larger bulk and low prices of the earlier stages of industrial development which were dependent only upon the easy exploitation of the nation's natural resources.

The advanced development of foreign industries is the compelling force of this nation's need of industrial art schools. Preparation in the industrial arts is as important as strong armaments.

The armies of the future world wars will be armed with industrial training. An ignorant army of workmen will bring national economic defeat. The schools of the nation are its citadels. The number of industrial art schools in the chief competing nations clearly shows the amount of preparation necessary in that direction to place the United States on a secure basis. The national problem of training designers to lead this army to commercial victory must be solved.

In the few States where industrial art schools now exist they are the result of definite, direct demand and cooperation of manufacturers and the educational and State authorities to make the most efficient use of the resources of their region.

It is the duty of every community of American citizens to analyze the resources and the industries of their vicinity to discover the need for industrial art education and to take the necessary steps to provide such training for the good of the citizens and the welfare of the Nation.

NOTE.—Undoubtedly the war has wrought many changes which should be shown on the map of industrial art schools, for numerous academic art schools have taken on an industrial aspect, while in other cities, as Grand Rapids was first to do in establishing the School of Art and Industry, movements are on foot to establish municipal schools of industrial art directly connected with the need of trained workers and designers in the chief industries of the city.

There are numerous technical, corporation, and trade schools, such as the Wentworth Institute, Boston, as well as schools of printing, engraving, press feeding, etc., where emphasis is placed upon technique rather than design, that might, in a broad sense, have been included.

A list of the industrial art schools, compiled by Florence N. Levy, editor, American Art Annual, is as follows:

*General Industrial Art Schools.*

Pennsylvania Museum School of Industrial Art, Philadelphia.  
Rhode Island School of Design, Providence.  
Trenton School of Industrial Art, New Jersey.  
Fawcett School of Industrial Art, Newark, N. J.

*Special Industries.*

Textile School, Philadelphia, Pa.  
Textile School, New Bedford, Mass.  
Textile School, Lowell, Mass.  
New York State School of Clay Working, Alfred, N. Y.

*Schools with a Few Industrial Art Courses.*

Lewis Institute, Chicago, Ill.  
Bradley Polytechnic Institute, Peoria, Ill.  
University of Illinois, Urbana.  
Newcomb College, New Orleans, La.  
Columbia University, Teachers College, New York, N. Y.  
Pratt Institute, Brooklyn, N. Y.  
New York Evening School of Industrial Art.  
Ohio Mechanics' Institute, Cincinnati, Ohio.  
College of Industrial Arts, Denton, Tex.  
Stout Institute, Menominee, Wis.

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## THE STEPS TO INDUSTRIAL SUCCESS THROUGH DESIGN.

(See Chart 9.)

While many of the art schools of the United States could advantageously revamp their ideals, courses and equipment for fine art work and possibly could undertake the education of industrial designers, the obvious and immediate need is for industrial art schools which carry the instruction through the entire eight steps of the constructive process in a practical and efficient manner. (Chart 1.)

Modern courses in art or industry must apply to the real needs of the commonwealth if they are to make their students successful.

The unprofitable academic method of teaching arts and industries is not a success because it overlooks the fact that designers, artists, and artisans are essentially workmen no matter how fine their creative faculties are. The academic method of attack is as follows: (1) The propounding of abstract theories which are too often without concrete connection in the mind of the student; (2) exercises to prove theories; (3) mere discussions of the probable application of the theories resulting in (4) utter inability on the part of the student in most cases to apply his otherwise valuable knowledge either in



taking an active part in the development of the Nation or in earning a sufficient living.

The result is that (1) the theories of the instructor are proved and filed away; (2) large portfolios of useless, though interesting and beautiful, work without connective application, are filed away or lost; (3) these students often become faultfinders as consumers, not realizing that if they understood the technique of industrial design they could in time change the goods on the market; (4) under the old academic régime salesmanship was looked upon as unworthy of consideration; (5) altogether, as far as the industrial arts of the home and of the national life in general are concerned, the result has been to raise the standards of amateur appreciation of the fine arts without comprehension of the proper foundation of design in the industries upon which they must depend.

The profitable old masters' method is based upon the apprenticeship procedure of the European Renaissance which begins under actual working conditions: (1) A definite concrete problem, something that needs to be done; (2) the students' interest is aroused by being brought to understand the relative need and value of the task; his imagination, enthusiasm and ambition are appealed to; (3) this is furthered and made definite through the study and analysis of the results of similar work, using the best examples obtainable; (4) in this manner the principles of structure, methods of attack, etc., are discovered; (5) equipped with such well-grounded principles attempts at original variations are made and from the best of these, according to increasing standards of judgment, finished designs or models are made; (6) the student is now ready to verify and draw accurate working plans for making the object which involves an understanding of, and in most cases should be followed by, the construction of the finished object; (7) the appreciation of the attitude of the user and the salesman regarding reasons for choice, reasons for purchase, methods of use, etc., are steps to understanding the means of disposing of such articles or of creating the market for and selling the skill in making them—important factors too often evaded.

The results are that (1) the student thus gains definite technical knowledge and learns how to apply it; (2) he does actual work and gains definite skill, which will make him able to become (3) an intelligent consumer, (4) a proficient salesman, or (5) an expert skilled workman or creative designer.

This means that the success of industrial art schools depends upon their having workshops as well as studios and that true appreciation, intelligent consumption and efficient production in the arts and industries depend upon an intimate understanding of the actual processes and a workmanlike attitude on the part of the students and instructors.

**INDUSTRIAL ART A MATTER OF BUSINESS.**

(See Chart 10.)

The most successful industrial art schools in the world were established to meet situations similar to those of the United States to-day. Foreign industrial art schools are almost without exception subsidized by the State. Foremost among all schools of industrial art stand the schools of arts and crafts of Great Britain, which are the outgrowth of the fact that the Parliament had taken steps in 1835 to appoint committees and provide funds for the establishment of the school of industrial arts at South Kensington, which was opened in 1837 to counteract the growing menace of German skill in design.

In 1851 the school was much criticized at the London Exposition because Great Britain was still outranked in quality of design by all great nations except the United States. Germany still outranked England in fine manufactured products. The school continued, however, and at the Paris Exposition of 1867 England was among the foremost producers of the finest goods. The expansion of her art schools under the London County Council has continued to increase this advantage. In 1918 the United States is still near the bottom of the list in industrial art schools, as well as in merit of products. (See Chart 8.)

The business men of England, and of Boston, Philadelphia, Providence, Chicago, and Grand Rapids were the first to urge the need and take steps toward establishing their industries on a more permanent and competitive basis through the training such schools could give.

The investment involved in America's homes and general schools for the preparation of its citizens and the perpetuation of its progress can not be effective either in terms of money or character unless this energy can be effectively carried over into the realm of American factories and stores.

There is an enormous gap between these two groups of institutions. From the place where the homes and schools leave off to where the factories and stores begin is, to the average individual, an uncharted realm. Many are they who lose their way and lose advantages previous preparation seemed to hold.

This precipitous valley of incompetence must be spanned with a bridge of preparation. Upon the taste which demands the best of the workers and upon the training which shall supply this demand we must base the directed commercial progress of the American youth through educational facilities.

The United States needs municipal art institutions based upon the local industrial needs of every community. These inspirational



centers of American good taste should aim to include (1) a museum of decorative arts, including manufactured articles of metal, wood, ceramics, textiles, etc.; (2) a school of fine and industrial art with studios, workshops, and salesrooms aiming to apply this inspiration directly to local industries; and (3) a museum of fine arts to include architecture, sculpture, painting, decoration, and the crafts as well as music, poetry, and the drama. A library is a most important connective link necessary to the three institutions.

Through the establishment of such institutions America can train and apply the wasted talents of her people, 90 per cent of whom, between the ages of 14 and 23 years, have now neither the inspiration nor the opportunity to gain such training as a means of becoming more proficient workers, salespeople, or buyers. The future progress of our Nation depends upon the efforts made now to provide this training. Anything done in this direction must start with individuals who inspire civic organizations to immediate action, spreading in time to State and national movements for the advancement of the possibilities of American life through education in the industrial arts.

Since cities are first to profit by having a better trained citizenship capable of producing goods which pay higher dividends through their skill—this is a matter which cities must put into operation as a business asset for the industrial progress of the Nation.

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## HOW YOUR CITY CAN IMPROVE ITS GOODS.

(See Chart 11.)

The prosperity of the Nation, the city, and village as well as of the individual, depends upon the "turn over" of their products as sold in the stores not only of our own country but in those of the entire world.

Next to competition upon the ground of price, which is the chief factor in the sale of goods, without other merit, the competition for goods made attractive through superior design and durability shows the wisdom and need for our cities to take definite steps toward the establishment of industrial art schools.

These schools will in time increase the quantity and value of the manufactures of their cities and of the Nation—

1. By training the designers, workmen, and salesmen to sell superior products in the thousands of stores of their class.

2. By training the buyers and users to discriminate between the ugly and the bizarre and be able to choose and demand goods of merit.

Although education in art and industry can prepare us to make and choose wisely, whether we profit by this instruction, individually

or collectively, depends upon our own initiative, (1) as consumers demanding design and durability in exchange for a reasonable price; (2) as designers firm in the standards we set, being guided by the principles of evolution rather than by the idiosyncrasies of fashion; (3) as workmen taking pride in excellence of craftsmanship and feeling a share of responsibility for the output; (4) as salesmen guiding the buyer through an intelligent and thorough understanding of the romance of goods and a sympathetic insight into the needs of the purchaser resulting in an enlightened customer and a satisfactory sale.

Except the agencies of education in industrial art bring these different groups of people to have the same standards there will always be an unbridged gap between them—resulting in (*a*) the customer's inability to get the goods he desires; (*b*) the designer's failure to follow any standard but the "fashion"; and (*c*) the manufacturers' inability to sell on any basis other than price.

Your city can increase the quantity and improve the quality of its goods by joining in a national movement for educating the people in what they should expect as consumers, how they should create as designers, build as manufacturers and suggest as sales people. Only in this way will better conditions be brought about through common ideals.

This is a public affair and not a private one.

The designer and the manufacturer can not afford to educate the public for it is only profitable to cater to those whose standard of intelligence and taste is taken for granted. On the other hand while many advertising campaigns are based on an educational idea, with few exceptions, they are not conducive to broad standards of choice either on the part of the salesman or his client. Although libraries and museums are reservoirs of the standards of good taste, it is the extraordinary individual who is able to use them as such except through direct inspirational assistance provided at public expense.

Your city can improve its goods, increase its markets and develop new industries by providing the industrial art education upon which these advances depend.

CHART 1.

# ALL THINGS PRODUCED *and* USED BY MAN PASS THROUGH SIMILAR STAGES of *The CONSTRUCTIVE PROCESS*

<u>PEOPLE INVOLVED</u>		<u>STEP ONE</u>	<u>REQUIREMENTS</u>
ARTISTS SCIENTISTS INVENTORS	{	UNDERSTAND A NEED	{ IMAGINATION ADAPTABILITY
		<u>STEP TWO</u>	
CAPITALISTS	{	STUDY BEST EXAMPLES	{ LIBRARY MUSEUM
		<u>STEP THREE</u>	
DESIGNERS	{	MAKE ORIGINAL SKETCHES	{ DRAWING DESIGN
MANUFACTURERS	{	<u>STEP FOUR</u>	
ARCHITECTS	{	MAKE FINISHED DESIGNS	{ TECHNIQUE MATERIALS
		<u>STEP FIVE</u>	
DRAFTSMEN DETAILERS	{	MAKE WORKING DRAWINGS	{ ORTHOGRAPHICS MATHEMATICS
		<u>STEP SIX</u>	
ARTISANS WORKMEN LABORERS	{	CONSTRUCTION	{ PROCESSES EFFICIENCY
		<u>STEP SEVEN</u>	
MERCHANTS SALES PEOPLE	{	SELLING <i>and</i> BUYING	{ PSYCHOLOGY BUSINESS
		<u>STEP EIGHT</u>	
INDIVIDUALS INSTITUTIONS	{	USE... <i>The</i> NEED FULFILLED	{ ECONOMY ENJOYMENT

CONSUMERS - DISTRIBUTORS

IT IS EVIDENT THAT  $\frac{5}{8}$  OF ALL THE STEPS IN  
MAKING ANY ARTICLE REQUIRE ART EDUCATION.  
COMPETENCE IN ANY ONE OF THE STEPS  
NECESSARILY INVOLVES A THOROUGH  
UNDERSTANDING *of* ALL THE OTHER STAGES,



CHART 2.

# EARNING CAPACITY *and* EDUCATION

Of 100 Students  
who enter the  
Grade Schools  
of the United  
States —

4 leave before 4<sup>th</sup> Grade

9 " in 4<sup>th</sup> "

13 " " 5<sup>th</sup> "

14 " " 6<sup>th</sup> "

14 " " 7<sup>th</sup> "

13 " " 8<sup>th</sup> "

67 " up to 8<sup>th</sup> "

33 complete 8<sup>th</sup> "

23 leave after 8<sup>th</sup> "

10 attend High School

3 graduate " "

<sup>5</sup>  
OUT OF 1000 attend College

4 " " 2 Years

3½ " " 3 "

3 " graduate College

Of 100 Workers  
engaged in the  
American Industries  
the Wages earned  
average as follows—

4 earn about 150. per year

5 " " \$200. " "

6 " " 250. " "

6 " " 300. " "

8 " " 350. " "

8 " " 400. " "

7 " " 450. " "

11 " " 500. " "

13 " " 600. " "

68 earn less than \$15. per wk.

32 earn over \$12. " "

15 " about 750. per year

12 " " 1000. " "

3 " " 1250. " "

2 " over 1250. " "

THE AVERAGE WORKER WILL ATTAIN  
NO HIGHER DEGREE OF TRAINING THAN  
THE STATE HAS THE WISDOM TO OFFER  
*and* THE AUTHORITY TO REQUIRE.

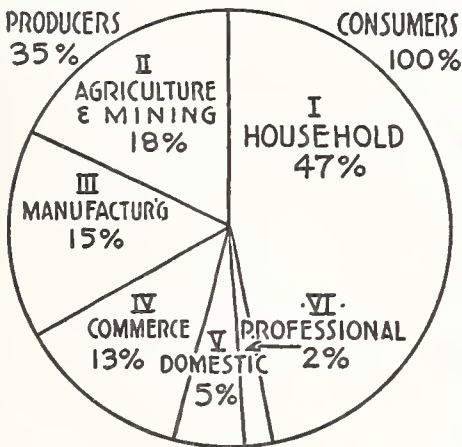
CHART 3.

# The NATION'S MOST VALUABLE RESOURCE IS ITS FUND OF HUMAN ENERGY

## DISTRIBUTION of ENERGY - TRAINING NEEDED ACCORDING TO TIME



## ACCORDING TO OCCUPATIONS



Courses based upon the "Constructive Process" for.

### A-OCCUPATIONS

- I. CONSUMERS
  - as 2. PRODUCERS
  - 3. DISTRIBUTORS
- through Courses in -
- I-Household Arts
  - II-Agriculture-Garden'g
  - III-Trades-Industries
  - IV-Commerce-Selling
  - V-Domestic Occupations
  - VI-Professions

### B-HEALTH

### C-CITIZENSHIP

### D-RECREATION

Etc.

**UPON THE HIGHLY TRAINED TALENTS OF HER CITIZENS THE FUTURE INDUSTRIAL-COMMERCIAL PERSONAL-CIVIC and NATIONAL WELFARE OF THE UNITED STATES DEPENDS - See Provisions of Smith-Hughes Bill.**



CHART 4.

CHARACTER IS INFLUENCED *by* ART EDUCATION...  
OUR SURROUNDINGS AFFECT OUR DISPOSITIONS,  
EXCEPT WE BE TAUGHT TO CHOOSE WISELY WE  
AND OUR CHILDREN'S CHILDREN SHALL BE  
THE VICTIMS *of* OUR OWN BAD TASTE

*You are One of the 102 Million "Artists" in the U. S. A.*  
*You are living in one the 18 Million Dwellings,*  
*You are a Member of one of the 22 Million Families*

YOU WHO UNDERSTAND THE INFLUENCE  
OF BEAUTY IN LIVING ARE MASTERS *of* YOUR  
ENVIRONMENT *and* BUILD YOUR CHARACTER  
UPON ATTRACTIVE HOMES, GOOD FURNITURE,  
GARDENS, CLOTHES *and* UTENSILS  
THOSE WHO NEGLECT THESE THINGS  
PAY FOR THEIR IGNORANCE IN BEING  
MASTERED *by* UGLY SURROUNDINGS WHICH  
BREED UNHAPPINESS *and* INEFFICIENCY  
*You are Building the United States of a Hundred Years Hence!*

CHART 5.

*The HIGH SCHOOL ART COURSES  
prepare Students definitely through a  
Four Year Series of Gradual Steps  
FIRST—To SEE More Accurately,  
SECOND—To Understand and Appreciate  
the Phenomena of Nature and the Works of Man.  
THIRD—To be able to Express these  
things Adequately. Accurately and  
Beautifully by various Graphic Means  
in order that as INTELLIGENT CONSUMERS  
they may comprehend the VALUE of BEAUTY  
FOURTH—To be able, possibly, to undertake  
the Professional Courses offered in the  
TECHNICAL SCHOOL  
OF ART AND INDUSTRY  
and become SALESMEN or MAKERS  
of the Beautiful Things which enhance the  
Full Realization of LIFE'S POSSIBILITIES  
and the True Enjoyment thereof.*

CHART 6.

TRAINING IN ART *and* INDUSTRY  
NOT ONLY INCREASES THE  
QUANTITY OF PRODUCTS BUT  
ENHANCES THEIR VALUE *and* THE  
EFFICIENT USE OF THE NATION'S  
FAST DIMINISHING RAW MATERIALS

DIFFERENT COMMODITIES	VALUE OF RAW MATERIAL	VALUE ADDED THROUGH SKILL	PERCENT SKILL ADDS TO VALUE
1 PIG IRON	\$	•	21 %
2 STEEL	\$	•	50 %
3 FORGINGS	\$	•	100 %
4 FOUNDRY	\$	•	120 %
5 STOVES	\$	•	190 %
6 TOOLS	\$	•	200 %
7 CUTLERY	\$	•	200 %
8 PENS	\$	•	480 %
9 CASH REGISTERS	\$	•	500 %
1 FURNITURE	\$	•	120 %
2 CARVINGS	\$	•	125 %
3 FRAMES	\$	•	140 %
4 TOYS	\$	•	150 %
1 LEATHER	\$	•	33 %
2 " GOODS	\$	•	60 %
3 GLOVES	\$	•	65 %
1 COTTON GOODS	\$	•	60 %
2 KNIT " GOODS	\$	•	80 %
3 PRINTED " "	\$	•	125 %
1 WOOL	\$	•	50 %
2 WOOLENS	\$	•	150 %
3 CLOTHING	\$	•	500 %
1 BRICK & TILE	\$	•	300 %
2 CERAMICS	\$	•	290 %
3 MARBLE & STONE	\$	•	200 %
1 PAPER	\$	•	50 %
2 WALL PAPER	\$	•	90 %
3 PRINTING	\$	•	250 %
4 ENGRAVINGS	\$	•	450 %
• Etc.			

**T**HE FINER THE SKILL IN DESIGN *and*  
WORKMANSHIP THE GREATER THE IN-  
CREASE TOWARD THE HIGHEST MARKET VALUES  
*N.B. The finer products have generally been imported!*



CHART 7.

# MICHIGAN AWAKE

YOUR NATURAL RESOURCES DO NOT  
MAKE YOU AS RICH AS WILL THE  
TRAINED SKILL WHICH PRODUCES  
MORE PROFITABLE FINISHED PRODUCTS

Commodity · MICHIGAN · Competitor · REASON ·

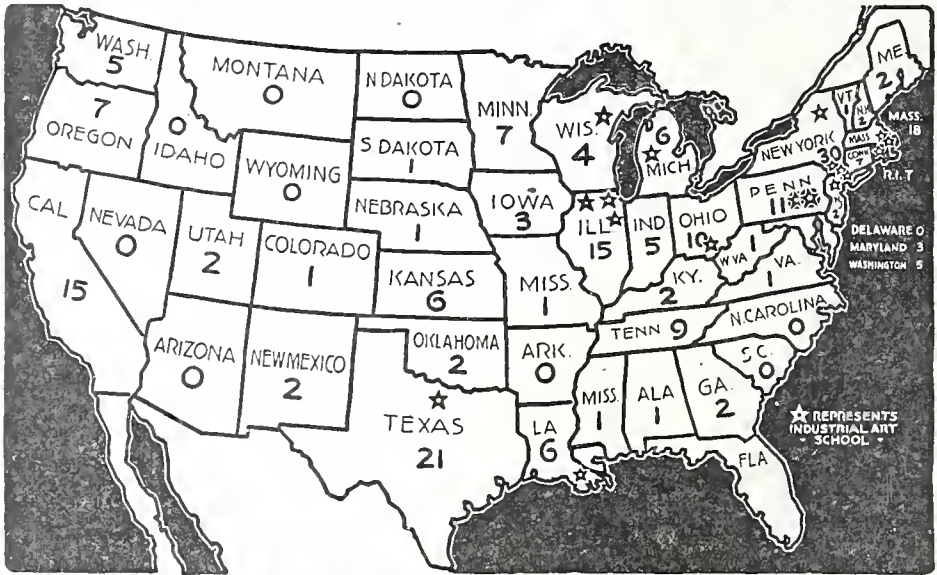
1	LUMBER	4th	Wash.	Nature
1	FURNITURE	2nd	N.Y.	SKILL
	COPPER ORE	3rd	Mont.	Nature
2	BRASS & BRONZ	3rd	Conn.	SKILL
	SHEET METAL	12th	N.Y.	SKILL
	IRON ORE	3rd	Minn.	Nature
3	CASTINGS	9th	Penn.	COAL
	AUTOS	1st	Ohio	SKILL
4	PAPER	8th	N.Y.	SKILL
4	PRINTING	8th	N.Y.	SKILL
	WOOL	9th	Wyo.	Nature
5	WOOLENS	10th	N.Y.	SKILL
6	LEATHER	6th	Penn.	SKILL
6	LEATHER MFG.	13th	Mass.	SKILL

MICHIGAN is 7th in MANUFACTURING.  
SKILL makes products 59% more valuable -  
TECHNICAL TRAINING BACKED BY MANU-  
FACTURERS & LABOR ORGANIZATIONS IS  
THE ONLY WAY TO BUILD THE STATE.

Make a chart similar to this for your own State, using the last United States Census Report as the basis for comparing the chief raw products with the chief manufactured products. The comparative rank of your State and the reason thereof will show whether or not industrial art schools would be of benefit.

CHART 8.

# *The* EFFICIENCY *and* VALUE OF SCHOOLS of ART *and* INDUSTRY ALSO INDICATES THEIR INCREASING NEED



## Rank of States in Value Added in Manufactg. — Rank in No. of Art Schools

1 NEW YORK . . \$1500 Million.	1 - 30 incl. ★ 4	Ceramics Etc
2 PENNSYLVANIA . 1050 " .	4 - 12 " ★ 2	General Textile -
3 ILLINOIS . . . . 750 " .	3 - 15 " ★ 2	Ceramics Etc.
4 MASSACHUSETTS . 650 " .	2 - 18 " ★ 2	Textile
5 OHIO . . . . . 600 " .	5 - 10 " ★ 1	Lithography Etc
6 NEW JERSEY . . 400 " .	8 - 2 " ★ 1	Ceramics Etc
7 MICHIGAN . . . 300 " .	6 - 6 " ★ 1	Furniture Etc
8 INDIANA . . . . 250 " .	7 - 5 " ★ 0	

NUMBER OF SCHOOLS OF INDUSTRIAL ART IN U.S.A. .	★ 18	SEE MAP
NUMBER " " " " " IN FRANCE .	32	
NUMBER " " " " " IN ENGLAND .	37	
NUMBER " " " " " IN ITALY .	24	
NUMBER " " " " " IN GERMANY .	59	

COMPETITION IS BECOMING MORE A MATTER OF SCHOOLS. DESIGNS *and* SHOPS THAN THE EASY EXPLOITATION OF THE NATION'S NATURAL RESOURCES.



# CHART 9.

## The SUCCESS OF COURSES IN ART and INDUSTRY DEPENDS UPON THEIR APPLICATION TO REAL NEEDS

### The UNPROFITABLE ACADEMIC METHOD

- ❶ Abstract Theories
- ❷ Exercises to prove Theories
- ❸ Probable application.
- ❹ Actual applications blindly left to student after leaving school.

### ❖ RESULT ❖

- I. Theories proved & filed
- II. Portfolios of useless work
- III. SUPERFICIAL CONSUMERS
- IV. ? SALESMEN
- V. AMATEUR APPRECIATORS

### The PROFITABLE OLD MASTERS' METHOD

- ❶ Definite Concrete Problem
- ❷ Understand Value & Need.
- ❸ Analyze Similar Articles
- ❹ Synthesize Principles
- ❺ Make Original Variations
- ❻ Make Finished Designs
- ❼ Make Working Drawings
- ❽ Construct Finished Object
- ❾ Appreciate User's Attitude
- ❿ Consider Economic Aspects

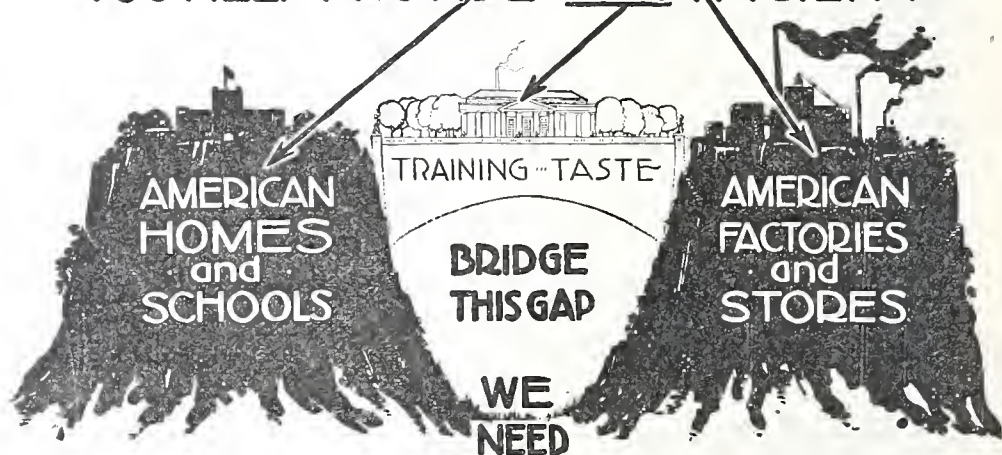
### ❖ RESULT ❖

- I. Definite Technical Knowledge
- II. Actual Work Accomplished
- III. INTELLIGENT CONSUMERS
- IV. PROFICIENT SALESMEN
- V. SKILLED PRODUCERS

TRUE APPRECIATION - INTELLIGENT CONSUMPTION *and* EFFICIENT PRODUCTION IN THE ARTS *and* INDUSTRIES - DEPENDS UPON AN INTIMATE UNDERSTANDING OF THE ACTUAL PROCESSES *and* A WORK-MANLIKE ATTITUDE ON THE PART OF STUDENTS *and* INSTRUCTORS.

# CHART 10.

**YOUR INVESTMENT HERE** will not help pay you as big dividends **HERE** unless **YOU HELP PROVIDE THIS FACILITY**



**MUNICIPAL ART INSTITUTIONS -  
INSPIRATIONAL CENTERS OF GOOD TASTE IN AMERICA**

**WHICH SHOULD INCLUDE**

- 1 - MUSEUM OF DECORATIVE ARTS** MANUFACTURES METAL - WOOD CERAMIC - TEXTILE
- 2 - SCHOOL OF ART AND INDUSTRY** WORKSHOPS STUDIOS SALESROOMS
- 3 - MUSEUM OF FINE ARTS** ARCHITECTURE - SCULPTURE CRAFTS - PAINTING - DECORATION MUSIC - POETRY - DRAMA

**90% of the nation's youth between 14 and 23 years are given NO technical training - either as workers salespeople or consumers - TRAINING = PROGRESS IF YOU BELIEVE IN THE FUTURE OF YOUR CITY - NOW IS THE TIME TO DO SOMETHING -**

CHART 11.

HOW CAN YOUR CITY IMPROVE *and*  
INCREASE THE GOODS SOLD IN  
? THESE AMERICAN STORES ?

GROCERY STORES	56.000.
DRUG	" 42.000.
HARDWARE	" 30.000.
DRY GOODS	" 28.000.
FURNITURE	" 27.000.
CLOTHING	" 20.000.
JEWELRY	" 20.000.
FOOT WEAR	" 18.000.
BOOKS	" 12.000.
MEN'S WEAR	" 8.000.

*I By training your WORKMEN, DESIGNERS and SALESMEN to produce and sell more attractive and substantial products.*

*II By training the BUYERS and USERS – always to avoid the ugly and demand beautiful things.*

ART EDUCATION IS DOING THESE THINGS.  
HOW ARE YOU DOING YOUR PART IN THE  
THINGS YOU MAKE AND BUY ?

